

## CLAIMS

1. - Control system for electric toy vehicle of the type that said vehicle includes an electrical micromotor that transmits movement to at least a shaft of the vehicle, being a part of the same motor shaft, specially  
 5 of the type that it is foreseen for moving on tracks with a guide groove flanked by electroconductive tracks with electrical current, and that includes a set of guide and dynamic current collector in the front extremity of the chassis, that includes an adapted fin of guidance to slide by the inner part of the mentioned guide groove retaining the vehicle on the  
 10 track, being this vehicle dominated by a control, **characterized in that** it comprises:

- (a) At least a control system, transmitter, associated to said control for transmitting signals that dominate the operation of the vehicle;
  - (b) At least a control system, receiver, to receive said signals,  
 15 integrated on the vehicle; and
  - (c) means of performance associated to said receiver;
- being said signals sent from the transmitter associated to the control, in digital waveform, consisting of a temporary weft of pulses in series composed by first pulses that carry an authentication code of the vehicle, followed of  
 20 second pulses that carry an operative command about the operation of the vehicle, where these signals are applied on at least one electroconductive track capable of being shared temporarily by at least two vehicles equipped with the respective mentioned receivers.

2. - Control system according to claim 1, characterized in that, in  
 25 addition, it comprises:

- (d) a control system, transmitter, capable of transmitting signals of information as for example position, crosses or parking, in certain points of the circuit or other incidences of the vehicle during its movement on the track;
- (e) electromagnetic and/or mechanical means that interact with the  
 30 mentioned transmitter to activate the transmission of the mentioned information; and

- (f) a management and control unit of the information to which the control is associated, that is at least one;

where the signals from the transmitter associated to the vehicle are digital waveform composed by first pulses that carry an authentication  
5 code foreseen to be compared with a reference code by the station, followed of second pulses that carry a message as for example an information about the position, crosses or parking in certain points of the circuit or similar situations or operative conditions of the vehicle.

3. - Control system according to claim 2, characterized in that  
10 said electromagnetic and/or mechanical means includes a first part included in the vehicle, capable of detecting the electromagnetic and/or mechanical excitation generated by a second part constituted by different devices associated to the guide groove.

4. - Control system according to claim 2, characterized in that  
15 said DS are applied on electroconductive tracks of power supply transmission for the mentioned micromotor.

5. - Control system according to claim 3, characterized in that  
said DS are comprised between a first level of voltage of predetermined feeding and a second level voltage superimposed on a power signal to  
20 said first level voltage predetermined, circulating all of the signals by the same power electroconductive tracks.

6. - Control system according to claim 1, characterized in that it includes means to store a registry of the signals sent by the vehicle with the purpose of making a later analysis of the races done and preparation  
25 of game programs.

7. - Control system according to claim 1, 2 or 3, characterized in that it is used a third alternative electroconductive track as much as independent channel of transmission of the mentioned DS as for the detection of information such as the position.

30 8. - Control system according to claim 1, characterized in that said means of performance associated to the receiver of the vehicle include an electromagnetic system capable of using a retractable element

capable of interacting with means intercalated in a section of the track to make a change of track defined by a different guide groove.

9. - Control system according to claim 8, characterized in that said means to make a change of track are integrated inside the guide  
5 grooves, in zones where the same ones have bifurcations.

10. - Control method for electric toy vehicle of the type in where said vehicle includes an electrical micromotor that transmits movement to at least a shaft of the vehicle, constitutive of the motor shaft of the same one, foreseen to move on tracks with a guide groove flanked by  
10 conductors or electroconductive tracks with electrical current, and that includes a set of guide and dynamic current collector in the front extremity of the chassis, that comprises a fin of guidance adapted to slide by the inner part of the mentioned guide groove retaining the vehicle on the track, being said vehicle dominated by a control, **characterized in that** there is a  
15 communication codified by means of digital waveform signals, in a first direction, from a station to the vehicle, consists of a temporary weft of pulses in series composed by first pulses that carry an authentication code foreseen to be compared with a reference code by the mentioned receiver of the vehicle, followed by second pulses that carry an operative  
20 command about the operation of the vehicle that is only processed if the receiver validates the authentication code .

11. - Control method according to claim 10, characterized in that said transmitted operative command from the station to the vehicle refers to at least two functions such as:

- 25 (a) the drive of one of the mentioned means of performance of the vehicle as a system that regulates the power applied to the micromotor and consequently that regulates the speed of the same one; and  
(b) the drive of means of performance of the vehicle as an electromagnetic system applied to move a retractable element  
30 capable of interacting with a section of track duly designed so that to make a change of guide groove.

12. - Control method according to claim 10, characterized in that it

is done a communication codified by means of digital waveform signals, in a second direction, from the vehicle to said station, consists of a temporary weft of pulses in series composed by first pulses that carry an authentication code foreseen to be compared with a reference code

5 by the station, followed of second pulses that carry a message as for example an information about the position, crosses or parking in certain points of the circuit or similar situations or operative conditions of the vehicle.